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In re application of	:	DONALDSON COMPANY, INC. et al.
Application Serial No.	:	PCT/US2003/31867
Filed	:	07 October 2003 (07.10.2003)
Agent Ref.	:	758.1416WOU1
Title	:	FLUID FILTER AND METHODS FOR ASSEMBLING THE SAID FILTER
Due Date	:	27 October 2004 (27.10.2004)

RESPONSE TO WRITTEN OPINION

European Patent Office
D-80298 Munich
GERMANY

Dear Sir:

In response to the Written Opinion mailed 27 July 2004, Applicants request the following amendments be made to the patent application identified above.

IN THE CLAIMS

Please amend the claims by substituting previous claim pages 20 through 23 with new claim pages 20 through 24.

REMARKS

Applicant has received and reviewed the Written Opinion. By way of response, Applicant has submitted new claims 1 - 18 for consideration. The Examiner is requested to reconsider the novelty and inventive step of these claims.

The claims have been written with reference signs, as requested in the Written Opinion. It is believed that the reference signs should help to clarify both, the invention, as well as the support in the specification.

The Written Opinion objected to the word "ledge". In particular, the Written Opinion expressed doubt that the claims were really within the original disclosure. The Written Opinion requested that the original disclosure of the features of the claims be expressed in this reply. Applicant believes that the reference numerals should help to clarify the support in the original disclosure. With respect to the word "ledge", the Examiner's attention is directed

to page 15, lines 23 through the end of the page. The ledge 318 is explained to be analogous to the bead 180 and the bead 126. If the Examiner objects to the use of the word "ledge", Applicant would be willing to change the wording of the claim to read "bead". Nevertheless, Applicant believes that the language "ledge" and the structure is amply taught and disclosed in the original specification.

The Written Opinion stated that if the embodiment of FIG. 1 falls under the scope of claim 1, then the disclosure of FIG. 1 of D1 also falls under the scope of claim 1. The claims as presented in both the Article 19 Amendment and the current Amendment are intended to cover the embodiments of at least FIG. 5, FIGS. 7 - 12, and FIGS. 17 - 20. The embodiment of FIG. 1 was not intended to be covered by the claims as presented in the Article 19 Amendment, nor in the claims as presently presented.

Reference D1 (U.S. Pat. 5,490,930) does not disclose or suggest the invention of claim 1. For example, the claim requires a housing having a closed end, an inwardly extending ledge, and a threaded region. The ledge is required to be located between the closed end and the threaded region. In Reference D1, it is noted that, first, the housing does not have a threaded region; rather, it is the baffle plate on Reference D1 that has a threaded region. Secondly, to the extent that the roll seam in Reference D1 forms an inwardly extending ledge, it is not located between the closed end of the housing and any structure that would correspond to the threaded region. For example, if the baffle plate is considered to disclose the threaded region of the housing, then the roll seam in Reference D1 is located between the threaded region and the open end of the housing, in contrast with the requirements of the claim.

Applicant has reviewed the other references cited in the Search Report and Written Opinion. Applicant cannot see any other reference that discloses or suggests the structure recited in claim 1, including a housing defining a closed end, an open end, a threaded region adjacent to the open end, and an inwardly extending ledge extending completely along the

internal surface of the housing wall and being located between the closed end and the threaded region. Further, none of the cited references discloses or suggests a projection arrangement including a base and a side wall, comprising at least one projection in extension from one of the base and the side wall, and engaging the inwardly extending ledge to space a filter cartridge from the housing wall to define a fluid flow path between the filter cartridge and the housing wall. An example of this structure is shown in FIG. 5, FIG. 7, FIG. 19, and FIG. 20.

Claim 15 defines a method of making a filter. The method recited addresses the problem of how to economically and quickly construct a filter. The claimed method describes the efficiency and economy in constructing these types of filters. For example, the housing can be pre-made without any regard for the filter cartridge. The filter cartridge can be pre-made without any regard for the housing. To make the filter, the cartridge is inserted through the open end of the housing. A projection arrangement is also inserted through the open end of the housing. The projections on the projection arrangement engage against a portion of the housing to secure the filter cartridge in the housing. The housing is required, in claim 15, to have an inwardly extending ledge extending completely along an internal surface of the housing.

It is noted that in Reference D1, for example, the filter cartridge would not fit through the open end of the housing if the roll seam is already in place. Instead, in Reference D1, the filter cartridge must be inserted in the can without engagement against a ledge, and then the can has its final step of forming the roll seam. In reviewing the other references cited in the Search Report and Written Opinion, Applicant could identify no other cited prior art that discloses or suggests a method of inserting a filter cartridge into an open end of a housing and engaging projections on the projection arrangement against an inwardly extending circumferential ledge.

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In view of the above claim amendments and remarks, Applicant requests that the Examiner acknowledge all claims are novel and have inventive step. If there are any questions, the Examiner is invited to contact the undersigned in the United States at the below listed telephone number.

Respectfully submitted,

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Dated: 25 October 2004

By _____
Julie R. Daulton
USPTO Reg. No. 36,414

What is claimed is:

1. A fluid filter arrangement (20, 140, 300, 300') comprising:

(a) a housing (22, 166, 304, 304') having a wall (28", 172, 308) defining a closed end (30, 174, 310), an open end (32, 176), an interior volume (44), and an inwardly extending ledge (126, 180, 318, 318');

(i) the housing including a threaded region (86, 178, 316, 316') adjacent to the open end;

(ii) the inwardly extending ledge (126, 180, 318, 318') being circumferential and extending completely along an internal surface of the housing wall;

(A) the inwardly extending ledge (126, 180, 318, 318') being located between the closed end and the threaded region (86, 178, 316, 316');

(b) a filter cartridge (24, 168, 306, 306') oriented within said interior volume of said housing; said filter cartridge including a tubular construction of filter media defining an open filter interior;

(i) said tubular construction of filter media (46, 190, 328) having a first end;

(ii) said filter cartridge includes an end cap (54, 192, 324, 324') secured to said first end of said tubular construction of filter media; said end cap defining an aperture in fluid communication with said open filter interior;

(c) a projection arrangement (100, 210, 350, 400) constructed and arranged to space said filter cartridge from said housing wall to define a fluid flowpath between said filter cartridge and said housing wall;

(i) the projection arrangement includes a base (96, 212, 354, 404) and a sidewall (98, 214, 356, 406);

(ii) said projection arrangement comprising at least one projection (110, 220, 362, 410) in extension from at least one of said base and said sidewall;

(iii) the projection arrangement engaging the inwardly extending ledge (126, 180, 318, 318') to space said filter cartridge from

said housing wall to define a fluid flowpath between said filter cartridge and said housing wall.

2. A fluid filter arrangement according to claim 1 wherein:
   (a) said projection arrangement includes a plurality of projections.

3. A fluid filter arrangement according to claim 2 wherein:
   (a) each of said projections (110, 362, 410) extends axially to engage said housing.

4. A fluid filter arrangement according to any one of claims 2 and 3 wherein:
   (b) said base (404) and said sidewall (406) are part of a plate (402) that is a separate piece from said end cap (324').

5. A fluid filter arrangement according to any one of claims 2 and 3 wherein:
   (a) said base (96, 212, 354) and said sidewall (98, 214, 356) are part of said end cap (54, 192, 324).

6. A fluid filter arrangement according to claim 4 wherein:
   (a) each of said projections (110, 362, 410) extends axially from said sidewall (98, 356, 406) of said endcap (54, 324, 324').

7. A fluid filter arrangement according to claim 6 wherein:
   (a) said sidewall includes a media-containing portion (99, 360) that forms a continuous wall (98, 356) around said filter media;
      (i) said media-containing portion (99, 360) extending from said base (96, 354) and having an end (114, 368);
         (A) each of said projections (110, 362) being in extension from said end of said media-containing portion.

8. A fluid filter arrangement according to anyone of claims 2-7 wherein:
   (a) each of said projections (110, 220, 362, 410) includes a free end;
      (i) each free end of said projections engaging the inwardly extending ledge (126, 180, 318, 318').

9. A fluid filter arrangement according to claim 2 wherein:

(a) each of said projections (221, 222, 223) extends radially to engage the inwardly extending ledge (180).

10. A fluid filter arrangement according to claim 9 wherein:

(a) each of said projections (221, 222, 223) extends radially from said base (212) of said endcap (192).

11. A fluid filter arrangement according to claim 10 wherein:

(a) said sidewall (214) includes a media-containing portion (216) that forms a continuous wall (218) around said filter media;

(i) said media-containing portion extending from said base (212); and

(ii) said projections (221, 222, 223) being generally orthogonal relative to said media-containing portion.

12. A fluid filter arrangement according to any one of claims 1-8 wherein:

(a) a portion (323) of the housing wall adjacent to the filter media defines an internal diameter about equal to an internal diameter of the housing wall between the threaded section and the internally extending ledge (318, 318');

(i) between the internally extending ledge (318, 318') and the portion (323) is a region of the housing wall having an internal diameter greater than the internal diameter of the portion to form a relief (380);

(A) the relief (380) allowing the projection arrangement (350, 400) to spring back to a normal position.

13. A fluid filter arrangement according to any one of claims 2-12 wherein:

(a) said filter media includes pleated media and a second end opposite of said first end;

(b) said end cap is a first end cap; and

(c) said filter cartridge further includes:

(i) a second end cap secured to said second end of said filter media;

(A) said second end cap being closed; and

(ii) an inner tubular liner circumscribed by said pleated media;

(A) said inner tubular liner extending between said first end cap and said second end cap.

14. A filter assembly comprising a fluid filter arrangement according to any one of claims 1-13; the filter assembly comprising:

(a) a filter head having a fluid flow inlet port and fluid flow outlet port; and

(b) the filter arrangement is releasably secured to said filter head.

15. A method of making a filter; the method comprising:

(a) inserting a filter cartridge (24, 168, 306, 306') and a projection arrangement into an open end of a housing; and

(b) engaging projections on the projection arrangement (100, 210, 350, 400) against a portion of the housing to secure the filter cartridge in the housing;

(i) the portion of the housing including an inwardly extending circumferential ledge (126, 180, 318, 318') extending completely along an internal surface of the housing.

16. A method according to claim 15 wherein:

(a) the filter cartridge (24, 168, 306) includes an end cap (54, 192, 324) having the projections extending therefrom; and

(b) said step of engaging includes engaging the projections (110, 220, 362) from the end cap against the inwardly extending ledge (126, 180, 318) of the housing.

17. A method according to claim 15 wherein:

(a) said step of inserting includes inserting a filter cartridge (306') and then inserting a separate plate (402) into the open end of the housing;

(i) the separate plate (402) including the projecting arrangement (400).

18. A method according to any one of claims 15-17 wherein:

(a) said step of inserting includes snapping the projections over a radial protrusion in the housing; and

(b) said step of engaging includes engaging the projections against the radial protrusion.